



**Department of Energy**  
Office of Science  
Washington, DC 20585  
February 27, 2006

Professor Stewart C. Prager, Chair  
Fusion Energy Sciences Advisory Committee  
Department of Physics  
University of Wisconsin  
1150 University Avenue  
Madison, Wisconsin 53706

Dear Professor Prager:

For many years, the fusion program has benefited from international collaboration in all aspects of the program. With the advent of the ITER project, the program will achieve a new and unprecedented level of collaboration. Also, during the time before ITER operations begin, our ITER partners will be bringing a new suite of advanced tokamak facilities on line around the world. It is time for us to begin to plan for the transition to the operating phase of ITER, and, in so doing, assess how we can optimize our experimental physics program, considering all the facilities that will be available worldwide.

Therefore, I would like for FESAC to address an important set of issues: how the program should evolve over the coming decade to take into account new and upgraded international experiments and how the program should prepare to make the transition to ITER. Viewing the world fusion program as a fully integrated international endeavor rather than a series of national efforts, where will synergies, redundancies, and gaps in research arise, and how should the U.S. program adjust to minimize duplicate effort and fill important gaps? Should existing facilities remain in their current configurations, or should they be reconfigured to pursue the science of different concepts? Serious consideration should also be given to whether a point exists within the next 10 years when funds for any of the four major U.S. facilities may be better used for hardware and research on more capable facilities abroad.

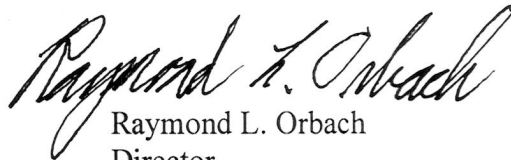
FESAC has recently produced two comprehensive reports on the U.S. Magnetic Fusion Program, one titled "Scientific Challenges, Opportunities, and Priorities for the U.S. Fusion Energy Sciences Program" in December 2004, and the next titled "Characteristics and Contributions of the Three Major United States Toroidal Magnetic Fusion Facilities" in July 2005. These reports should provide a starting point for your work. This report should look strategically to the future, providing decision points and criteria for making those decisions. I will be able to provide budget guidance as soon as the Office of Science five-year budget is public. Given that funding will be finite, you will need to recommend priorities among the opportunities that you will identify.



This is an exciting time for the fusion program, a time for the fusion community to look forward with confidence that we will have a burning plasma experiment, as well as support for the balance of the program. It is also a time to reassess our portfolio of experiments and optimize what we are doing in the context of the world fusion program.

I would like to receive your report by the end of February 2007. Thank you for your time and your hard work.

Sincerely,



Raymond L. Orbach  
Director